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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,529

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James M. Nagashima

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8322

7590

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EXAMINER

IP, SHIK LUEN PAUL

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/676,529

**Applicant(s)**

NAGASHIMA ET AL.

**Examiner**

Paul Ip

**Art Unit**

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 2837

**DETAILED ACTION*****Drawings***

1. The drawings are objected to because the boxes shown in figures 1 and 2 are not labeled with proper names as required under 37 CFR 1.83(a). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Art Unit: 2837

3. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by McGaughey et al (2003/0154041 or 6,708,134).

With respect to claims 1, 9, and 17, the patent and publication to McGaughey et al disclose method to estimate motor speed for stabilized motor control. McGaughey et al disclose at the abstract "The speed estimator is based on an optimized fast orthogonal search algorithm with control of the carrier drive frequency to reduce computation time. The reduced processing time provides for an update rate to the motor controller sufficient to maintain motor stability to near zero the motor rated base speed". McGaughey et al show in figure 2 a motor 205 connected to an inverter 204, motor speed data (209, 213) compared with speed reference 203 at the Vector Controller 201 to modulate the inverter 204. McGaughey et al show in figures 3a-3d and figure 4 the comparing frequency 314 and frequency regions 315 to determine the frequency pairs 316 in order to control the inverter. The frequency comparing and the frequency regions are considered as the speed ranges as recited in the claims.

With respect to claims 2, 10, 11, and 12, McGaughey et al show that the machine terminal information at lines 209 and 213 are being processed and determining the motor speed databased on the processed machine terminal information.

With respect to claims 3 and 4, McGaughey et al show in figures 3a-3d and figure 4 that the machine terminal information is selected from the group consisting of machine terminal current and machine terminal voltage based on the terminal information from lines 209 and 213.

With respect to claims 5 and 13, McGaughey et al show in figure 2 that the Rotor Flue Reference 202 and the Speed Reference 203 are the manufacturer predetermined motor speed ranges.

With respect to claims 6 and 14, figure 2 shows that the Inverter switching frequency value is based on the determined motor speed range from the Vector Controller 201.

With respect to claims 7 and 15, since McGaughey et al disclose computer numerical controls (CNC) systems, the processor control algorithm is selected from the group consisting of an operating system and BIOS of the computer.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2837

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGaughey et al (2003/0154041 and 6,708,134) in view of Okachi et al (5,459,386).

Claims 8 and 16 further require computer codes for providing a first/second inverter switching frequency when the received motor speed data is within a first/second motor speed range. Whereas, the patent to Okachi et al discloses motor drive control apparatus having a plurality of motor characteristics including a first speed range and a second speed range according to the first and second inverter switching frequencies of the torque current limiting value characteristic curve. Patentability determination is made that McGaughey et al disclosed the computer step of Search for frequencies in each region 315 would be a hint of considering the speed regions of the inverter. Therefore, in light of Okachi et al, it would have been obvious to one of ordinary skill in the art to provide McGaughey et al with the first and second speed ranges as taught or suggested by Okachi et al.

Art Unit: 2837

***Citation of Pertinent References***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Ohhama (4,933,608) discloses method of eclectically braking a linear motor. Ohhama shows in figures 3, 5, 6, and 7 the speed ranges. Ohhama also shows in figure 4 the speed comparing and speed ranges determination steps.

The patents or publications to Sweo (6,784,634 or 2003/0052643), Stammer et al (4,847,555), Lipo et al (5,650,707), Butline (4,971,522), and Plasz et al (2002/0039010 or 6,720,751) disclose inverter controlled motor systems with different speed ranges.

The patents to Koharagi et al (4,880,474 or 4,983,895, or 5,075,607, or 5,294,872, or 5,166,585) disclose motor speed ranges control systems for vacuum cleaners with a microprocessor for determining the speed ranges based on the current feedback information data.

***Customer Services Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Ip whose telephone number is (571)-272-1941. The examiner can normally be reached on Monday to Friday from 6:30 a.m. to 3:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (571)-272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul Ip  
Primary Examiner  
Art Unit 2837